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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,477	09/29/2006	Sven-Eric Lunner	OUTO 3528	9561

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EXAMINER	
VELASQUEZ, VANESSA T	
ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/599,477	LUNNER ET AL.	
	Examiner	Art Unit	
	Vanessa Velasquez	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-32* is/are pending in the application.

4a) Of the above claim(s) *20-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-20 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Restriction

Applicant's election with traverse of Group I, claims 15-20, in the reply filed on October 13, 2008 is acknowledged. The traversal is on the grounds that the document cited to support the restriction (i.e., WO 03/018850 by Eklund et al.) does not refer to a flux or fluxing agent. This is not found persuasive because although the term "flux" or "fluxing agent" is not used, the sludge product functions in the same manner as a fluxing agent, as it is taught by Eklund that the sludge can be used in the smelting of steel (production of steel via extraction from ore) to aid in the separation of silicon, oxides, and fluorides from the iron melt into a slag phase (page 5, lines 1-6).

The requirement is still deemed proper and is therefore made FINAL.

Claims 21-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Status of Claims

Claims 15-32 are pending. Claims 15-20 were elected in response to a restriction requirement. Claims 21-28 are withdrawn as being drawn to a non-elected invention. Claims 29-32 are newly added and depend on the elected invention. Therefore, claims 15-20 and 29-32 are eligible for examination on the merits.

Status of Previous Objections

Claim 17 stands objected to for a typographical error. There is an open parenthesis in step (c) with no corresponding closed parenthesis. The typographical error may alternatively be a misprint of the degree (^{o}) symbol. Appropriate correction is required.

Status of Previous Rejections under 35 USC § 112

The previous rejection of claim 19 under the second paragraph of 35 U.S.C. 112 is withdrawn in view of Applicant's amendment to claim 18 to correct the lack of antecedent basis.

Claim Rejections - 35 USC § 112, First Paragraph

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, claim 31 recites that the "steel heat is carburized." There is no support for this step in the specification. Claim 32 is likewise rejected for being dependent on a rejected base claim.

Claim Rejections - 35 USC § 112, Second Paragraph

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 32 recites that the addition of CaO effects the reduction that takes place in claim 31. However, because claim 31 refers to two locations where reduction takes place (i.e., in the steel heat and in the fluxing agent), it is unclear to which location the reduction of claim 32 applies. For the purposes of examination, the Examiner will interpret the reduction step of claim 32 to refer to the reduction of the steel heat.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 15-19, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (WO 03/018850 A1) in view of Lintz (US 3,276,860). Claims 15-19 stand rejected on the same grounds set forth in the Office action dated July 9, 2008.

Regarding the amended portion of claim 18, Eklund et al. in view of Lintz are silent as to carrying out the calcining and melting step in a furnace. However, it would have been obvious to one of ordinary skill in the art to melt in a furnace, as furnaces are conventional enclosures for heating substances.

Regarding new claim 29, Eklund et al. teach that the hydroxide sludge, which functions as a flux, is added onto a steel melt containing slag (page 5, lines 1-4).

Regarding new claim 30, Lintz teaches that fluorspar (CaF_2) is added to steel melts in order to reduce the viscosity of the slag in the melt (col. 1, lines 9-10). Decreasing the viscosity of the slag facilitates the separation of slag from the melt (Lintz, col. 1, lines 10-11). Therefore, it would have been obvious to one of ordinary skill in the art to add enough fluorspar-containing fluxing agent such that the amount of CaF_2 corresponds to an amount sufficient to thin the slag to a desired level in the steel melt.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (WO 03/018850 A1) in view of Lintz (US 3,276,860), and further in view of Klingle et al. (US 4,252,462). The claim stands rejected on the same grounds set forth in the Office action dated July 9, 2008.

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eklund et al. (WO 03/018850 A1) in view of Lintz (US 3,276,860), as applied to claim 15 above, and further in view of Sulzbacher (US 4,380,469) and Fritz et al. (US 5,611,838).

Regarding new claim 31, Eklund et al. in view of Lintz do not teach that the steel melts (steel heats) therein are carburized and subsequently reduced. Sulzbacher, drawn to a method for reducing charges of metal oxides and ores, teaches that melted iron ores are reduced in order to facilitate subsequent processing of the reduced melt into steel metal (col. 1, lines14-20). The same melt is also carburized in order to increase the carbon content of the melt and to react with combustion gases in order to provide additional chemical energy to the reduction process (Sulzbacher, col. 2, lines 40-44, 52-57; col. 3, lines 9-21, 53-59). Additionally, it is taught that fluxes may be added to the charge (Sulzbacher, col. 1, lines 7-13). Therefore, it would have been obvious to one of ordinary skill in the art to carburize and reduce the steel melts of Eklund et al. and Lintz in order to make the steel production process more efficient, as taught by Sulzbacher.

Still regarding new claim 31, Sulzbacher teaches reducing the ore, but does not teach adding FeSi to reduce the ore and other substances therein. Fritz et al., drawn to a process for forming an iron melt, teach the addition of fluxes and reducing agents to molten iron (col. 5, lines 66-67). Reducing agents may be carbon-based, but can also comprise less expensive compounds such as FeSi (Fritz et al., col. 8, lines 10-13). Therefore, it would have been obvious to one of ordinary skill in the art to utilize FeSi as a reducing agent in lieu of or in addition to carbon-based reducing agents in the process of Eklund et al., Lintz, and Sulzbacher because FeSi is a relatively less expensive reducing agent, as taught by Frtiz et al.

Regarding new claim 32, lime (CaO) is a common reducing agent as disclosed by Fritz et al. (col. 5, lines 66-67 to col. 6, lines 8-12).

Response to Arguments

Applicant's arguments filed October 13, 2008 have been fully considered but they are not persuasive.

First, Applicant primarily argues that the objectives of Eklund et al. differ from the claimed invention. In response, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Specifically, Eklund et al. aim to recover metals from the hydroxide sludge from pickling treatments. The claimed invention is drawn to a process of making a fluxing agent comprising hydroxide sludge that originates from pickling liquid. However, the differences between the prior art and the claimed invention would be obvious in view of the fact that the prior art recognizes that the treated hydroxide sludge product functions in the same manner as a fluxing agent, as it is taught by Eklund that the sludge can be used in the smelting of steel (production of steel via extraction from ore) to aid in the separation of silicon, oxides, and fluorides from the iron melt into a slag phase (page 5, lines 1-6). Therefore, a *prima facie* case of obviousness may still be maintained utilizing the Eklund et al. reference.

Second, Applicant argues that the fluoride-containing components of the residues in Eklund are incidental. In response, the claimed invention does not specify whether the fluoride is incidental or must be purposefully added; it states that the hydroxide sludge has to contain a fluoride compound. Therefore, Eklund et al. still properly reads on the claimed invention.

Third, Applicant argues that the low-grade fluorspar in the Lintz reference is disadvantageous because it is too fine and is easily blown out of furnaces. In response, Applicant is arguing a feature that is not claimed.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793